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# THREE THINGS AN ECONOMY NEEDS IN THE ERA OF THE FOURTH INDUSTRIAL REVOLUTION

Tri stvari koje su potrebne ekonomiji u eri četvrte  
industrijske revolucije

## Abstract

After the fiscal consolidation is successfully over, what new policy challenges await Serbia? In the following period, beside sustainability of fiscal balance, the core challenge is going to be the implementation of the new model of economic growth. Without adequate growth, structural inflation could easily return. A new model should provide sustainability and inclusivity proposals.

Before we define the new growth model, we yearn to understand the causes of vulnerability and risk exposure, as well as what underpins the recent shift in the economic and development paradigm. Also, we intend to find answers to related questions as follows. Are we ready to embrace new normal in defining economic rules based on a heterodox approach? Have we made progress in creating an environmentally friendly model of economic growth that can ensure Serbia's convergence to the EU income levels? How would a new set of policy choices impact the long-run GDP growth and wellbeing?

Our intention is to provide the new growth model (and related policy platform) which would become a true force for a better Serbia capable of overcoming persistent economic imbalances and fault policy lines and forming a foundation of a sustainable and inclusive economy, both toward the people and nature.

**Keywords:** *fiscal consolidation, growth model, the fourth industrial revolution, new normal, combinatorial innovation, industrial policy, hard macroeconomic policy regime.*

## Sažetak

Posle uspešnog završetka programa fiskalne konsolidacije, koji novi izazovi očekuju Srbiju na polju ekonomske politike? U narednom periodu, pored održivosti fiskalne stabilnosti, ključni izazov je sprovođenje novog modela ekonomskog rasta. Bez odgovarajućeg rasta, strukturna inflacija bi lako mogla da se vrati. Takođe, nov model rasta bi trebalo da ispuni uslove održivosti i inkluzivnosti.

Pre nego što definišemo novi model rasta, želimo da shvatimo uzroke ranjivosti i izloženosti riziku, kao i šta to podupire nedavni zaokret u ekonomskoj i razvojnoj paradigmi. Takođe, nameravamo da pronađemo odgovore na sledeća povezana pitanja. Da li smo spremni da prihvatimo nove normalnosti u definisanju novog skupa ekonomskih politika zasnovanih na heterodoksnom pristupu? Da li smo ostvarili napredak u kreiranju modela ekonomskog rasta koji vodi računa o ekologiji i koji Srbiji može da obezbedi konvergenciju sa EU u pogledu nivoa dohotka? Na koji način bi novi skup politika uticao na dugoročni rast BDP-a i blagostanje?

Namera je da pružimo novi model rasta (i povezane ekonomske politike) koji bi postao istinska snaga za bolju Srbiju sposobnu da prevaziđe uporne ekonomske neravnoteže i pogrešne koncepcije i da postavi temelje za održivu i inkluzivnu ekonomiju, kako u odnosu na ljude tako i u odnosu na prirodu.

**Ključne reči:** *fiskalna konsolidacija, model rasta, četvrta industrijska revolucija, nova normalnost, kombinatorna inovacija, industrijska politika, čvrst režim makroekonomskih politika.*

## Introduction

After spending more than three years in fiscal consolidation, Serbia's economy should address another grand topic, growth and its sources. Why is growth so important? Because the growth has become a primary necessity in an era of radical change inspired by a new normal not only for prosperity, but also for survival. In economic orthodoxy, the GDP regularly represents a good proxy for prosperity (or welfare increase), where more is always better. Such line of reasoning, actually, leads to the treatment of growth as a double-edged sword. Under the neoliberal model of growth, the "ill growth" is possible. Also, after some episodes of exponential growth, overshooting becomes a real threat.

In the new growth model, growth has to be part of the solution rather than part of the problem. Namely, in an economy burdened with future consequences of high public debt, past social expenditure commitments, and a dire need to respond to new but usually disruptive technologies [3], it is reasonable to rather look for the ways to enhance smart growth than to resort to austerity measures influencing negative (eventually, slow but unsustainable) growth.

Politicians are regularly obsessed with robust growth. The political need for high growth rates requires from the ruling party commitment to service the outstanding debt, secure social inclusion, and support the idea of intergenerational equity. This is particularly relevant for countries like Serbia where current generations are expected to honor the commitments of the previous turbulent years. Moreover, the benefits of economic growth have been unequally distributed across different social and skill groups due to slower dynamics of real labor incomes in older style routine and repetitive jobs caused by rapid technology change and growing global competition. Additional reason for robust growth (and faster job creation) is the rapid deterioration of competences after years of waiting for the first job (the lost generation). Finally, robust economic growth provides a greater cushion to address the potential post-crisis deflation threat, clean up banks from non-performing loans (NPL), and restructure debt-ridden publicly-owned companies.

The paper covers two interrelated segments. The first segment provides situation analysis in Serbia at the end of 2018. It is crucial to project sustainability of fiscal consolidation and the growth prospects in terms of where we are right now and where we are going. Hence, there are three main issues we intend to address in this segment: strategic audit of Serbia's economy, progress report on the effectiveness of key policy measures implemented in the program of fiscal consolidation 2014-17, and factors of vulnerability related to the major risk stressors. After the diagnosis, we will define possible solutions using four scenarios. More precisely, in the second segment we intend to illuminate three more issues: the impact of paradigm change in business economics and economic theory (or economics) on economic policy choices, bold ideas for future growth model and growth-enhancing policies with industrial policy as a core concept of the double paradigm shift.

## Strategic assessment of Serbia's economy

Serbia's current economic and institutional problems can be traced back to the beginning of the 1990's when the economy, after geopolitical crisis, entered transitional recession. The crisis for the most part could be explained by political and professional inability to find the right answers to inherited and evolving geopolitical challenges as well as limited economic policy capacity to respond quickly and adequately to old and emerging macroeconomic imbalances.

Serbia lost time because political leaders did not understand that with the fall of the Berlin wall the geopolitical map of Europe changed dramatically and permanently. Almost three decades later, Serbia's transition architects misread the deep concerns of influential economic scholars and wrongly concluded that the 2008 global financial and economic crisis, known as the Great Recession, was, actually, an opportunity for Serbia. The reality was quite different. External shock only exacerbated internal imbalances in the economy which was unable to restart sustainable economic growth for too long.

Cumulative external deficits (current account and capital balance) as well as the fiscal balance deficit during

a long period of time led to debt overhang and strongly eroded not only investor's expectations but also, and primarily, the demographic position of the country [6]. In the last period, Serbia moved from high unemployment rates before the program of fiscal consolidation initiation to factual scarcity of human capital (both basic and advanced).

During the last four years, a consensus among law makers and policy makers sustained that a fiscal consolidation program was needed as the very first step to take the economy back on a path of sustainable growth [21]. Figure 1 portrays key macroeconomic data for five years, precisely the last two years, along with current year and projections for the following two years.

Fiscal discipline enabled improvement of public revenues. Favorable revenue performance contributed to the reduction of both fiscal and external deficits. Continuous fiscal consolidation has led to budget surpluses in the last two years (+1.2 percent in 2017 and +0.5 percent of GDP in 2018). In 2018, despite increased public spending in nominal terms, including upward adjustments in pensions and public sector wages, after the initial reduction on the start of the program, we had the overall budget surplus. It was the result of a combining effect of growth, visible decline of interest payments, and under-execution of forecasted public investment.

In 2018 we see budget surplus on strong tax-reach domestic demand and lower interest rate expenditures,

followed by a return to balance in 2019 forecast influenced by public CapEx acceleration, wage/pension hikes, and tax cutting. Also we see lower current account deficit around -5.5 percent of GDP, moving towards -5.0 percent of GDP in 2019, and -4.5 percent in 2020, based primarily on the strong export growth, lower investment income deficit, and higher remittances forecast.

Lower interest payments were a direct benefit of the improved country's credit rating (and a huge reduction in interest rate spreads) as well as fewer activated guarantees to utility and state-owned companies. Taken together, these savings increased over time and were 0.5 to 1.0 percentage points higher in 2018 than in the previous year.

At the end of the year 2018, public debt ceases at 57.2 percent of GDP. Average 6M BELIBOR decreased from 3.65 percent in 2016 to 3.60 percent in 2017, and 3.03 percent in 2018. RSD 5Y Bond Yield (average) was also decreasing from 6.34 percent in 2016 to 5.50 percent in 2017 to 3.91 percent in 2018.

Inflation was low and stable during the whole period of fiscal consolidation. Final CPI in 2018 of +2.0 percent y-o-y is in line with preliminary estimation. Despite net wages hike of +7.9 percent, growth contributed to a lower inflation. The increase recorded in the private sector was bigger than in the public sector.

Lower average inflation is owed to decreasing pressure from fuel prices and a stable RSD. Relative increase in

**Figure 1: Macroeconomic data**

Macroeconomic data	Historic data		Current year	Forecast	
	2016	2017	2018	2019	2020
Consolidated Budget Balance (% of GDP)	-1.3	1.2	0.5	0.0	0.5
6M BELIBOR (average, %)	3.65	3.60	3.03	3.00	3.25
RSD 5Y Bond Yield (average, %)	6.34	5.80	3.91	3.55	3.60
Public debt (% of GDP)	71.9	61.3	57.2	53.5	50.1
Inflation (CPI, average, yoy %)	1.1	3.1	2	2.2	2.5
Net wages (EUR, nominal, yoy %)	1.8	3.5	7.9	4.5	3.4
Private consumption (real, yoy %)	0.8	1.8	3.3	3.4	3.4
EUR/local currency (year average)	123.47	118.47	118.20	117.45	117.00
NPL ratio (average, %)	17.0	9.8	6.4	6.0	5.8
Real GDP (constant prices, yoy %)	2.8	1.9	4.5	4	3.5
Nominal GDP (EUR bill)	34.6	36.8	40.1	42.9	45.7
GDP per capita (EUR)	4,889	5,226	5,696	6,088	6,495
Unemployment rate (ILO, %)	15.3	13.5	12.5	11.5	10.6

demand for foreign goods has come from capital goods related to new investments dominantly financed by FDI. Relatively large capital inflow allowed the National Bank of Serbia (NBS) to moderately appreciate the nominal and the real effective FX rate. More precisely, in December 2017, the local currency appreciated against the euro by 4.0 percent in nominal terms and remained broadly stable throughout the 1Q 2018. In the start of 4Q 2018, both the nominal and the real FX rate appreciated y-o-y on average by 0.7 percent.

The cost of capital is decreasing. After holding the prime rate at 4.0 percent for 13 months, the NBS lowered it successively to 3.75 percent in September 2017, 3.25 percent in March 2018, and 3.00 percent in April 2018. Prime rate decrease contributed to a lower cost of capital and price stability, as well. We see in 2018 a credit growth of around 8.0 percent y-o-y, driven by private sector lending amid stronger final and investment demand. Nominal credit growth to the general government remained sluggish, while credits to the local government even decreased. Net interest margin is relatively low and decreasing. In 2018 it ceases at 3.7 percent level.

The stability of the financial system improved as commercial banks have written off and/or sold bad loans more aggressively. The share of gross NPLs declined from 17 percent at the 4Q 2016 to a more tolerable level of 9.8 percent at the 4Q 2017, and 7.8 percent at the 3Q 2018. As commercial banks continue to clean their balance sheets, it is expected to decline further toward 6.4 percent till year-end, 6.0 percent in 2019, and 5.8 percent in 2020.

Job creation is in progress. In the period January-August 2018, total employment increased by 3.7 percent y-o-y, driven entirely by growth of formal employment in the private sector (5.9 percent). Public sector employment decreased by 1.4 percent as a result of rightsizing. Creation of new jobs in services (particularly, retail, wholesale trade, and tourism) dominated new employment in real economy. Also, there were more opportunities for self-employment. Concretely, the number of startups increased by 6.0 percent. At the end of 2018, the unemployment rate has reached 12.5 percent. The average employment rate reached a record high of almost 50 percent.

In the analyzed period, the growth was continuously in a positive territory, but sluggish. The exception is the year 2018. More precisely, GDP growth in constant prices y-o-y in 2018 was 4.5 percent. In the same year, nominal GDP amounted to EUR 40.1 billion. Simply put, this means that GDP per capita was EUR 5.696.

Despite over-performance in most macroeconomic aggregates owed to successful fiscal consolidation and the removal of some of the structural imbalances, many fault lines still exist. They generate fiscal risks and constrain policies supporting sustainable growth necessary to close the transitional output gap, and respond adequately to challenges posed by the paradigm change in economics and impact of new normal, particularly the fourth industrial revolution (4IR), as well as trigger deindustrialization reversal.

### **Progress report on the impact of recent policies on growth**

Echoing of fiscal consolidation on related macroeconomic fundamentals is strong. Actually, the economy reacts quickly and positively on fiscal consolidation. Recovery started in the second year of the fiscal consolidation program. After that, Serbia has been experiencing moderate economic recovery, with notable acceleration of GDP growth in 2018, signaling sustainability of fiscal consolidation and related reform's achievements.

Concretely, GDP growth accelerated to +2.8 percent in 2016, and ticked down to +1.9 percent in 2017, before improving to +4.5 percent in 2018. The last year growth is above the average for the Western Balkans. In the last year, growth was more robust than originally expected due to significantly stronger expansion in agriculture, as well as the larger volume of construction works than forecasted. Growth is projected to continue to +4.0 percent in 2019 and to +3.0 percent in 2020 due to carryover effect combined with final demand and export growth.

During the last four years, investments, almost equally public and private, have been playing an increasingly important role, both as the sources of expanding the productive capacity and as means of productivity improvements. Investments increased competitiveness of

Serbia's economy that would define its ability to address the challenges inspired by 4IR and secure sustainable long-run growth.

Speed of growth is highly dependent on the structure of the economy. On the supply side, services remain the main driver of growth with a contribution of 1.9 percentage points, followed by agriculture with 0.8 percentage points. Within services, the highest contributions to overall GDP growth came from trade, logistics, and tourism-led exports. In the last three years, agriculture experienced pronounced cyclical movements due to the effects of climate change in the absence of irrigation and flood protection systems. All production sectors have continued to make positive, but not desired contribution to growth. Industry and construction contributed 0.6 percentage points each. Construction sector owed its important role within the real economy to a sharp (double-digit) real increase in the value of completed works.

On the expenditure side, investment activity and final consumption are the most important sources of growth, contributing 2.3 percentage points each. As the result of improved foreign trade, the usual negative impact of net exports on economic growth has been weaker than in the previous period, while government consumption had a positive contribution of 0.9 percentage points. Net taxes also made a positive contribution to growth due to higher personal consumption.

Albeit positive and accelerating, the growth is not significant enough for catching up to the EU or sufficiently vibrant to provide sustainability and inclusivity proposal. Unfortunately, despite substantially exceeding the original growth forecast, the present economic recovery is not strong enough to yield long-run robust growth rates needed to secure the desired income convergence with the EU. Moreover, to succeed in catching up to the EU, Serbia needs not only robust, but also intelligent growth based on the new structure of the economy that enables it to grow faster and smarter to outperform its near competitors. Simply put, the question is how can Serbia gain the competitive edge beyond the traditional industrialization based on the position rent, natural capital, technology transfer and cheap labor? Externally financed consumption-led growth is not sustainable without strong internally generated

investments and exports. Also, Serbia desperately needs investments based on internally developed technology solutions based on ICT breakthroughs and with a stronger multiplier effect, as well.

In the last period, Serbia's economy was successfully escaping double recession (transitional recession and the Great Recession). Albeit welcome, the recovery from recession to moderate growth recorded in the past three years still does not guarantee the sustainable growth dynamics necessary to eliminate the output gap as the great legacy of a long and deep downturn, comfortably spaced to service the accumulated debt, secure convergence to EU income levels, and quell rising social tensions and expectations built up during a long period of economic stagnation strongly impacting demographic risk deterioration.

No doubt, fiscal consolidation was a prerequisite for macroeconomic fundamentals improvement. Related achievements based on fiscal balance are, also, sustainable. The economy is not more out of tune, but it is still impotent. How to energize the economy is a key question for architects of the system, law makers, and policy makers.

## Key sources of vulnerability

These days, despite notable improvements in the overall budget management as well as inflation control, recurrent expenditures on subsidies and social benefits remain high and untargeted, while current spending still represents 90 percent of all spending. To keep FX rate stable, the NBS spent almost every year more than the level of FDI. Furthermore, investors' sentiments are fragile due to the Serbia-Kosovo dispute. Previous facts are signaling a serious vulnerability of the economic system.

Structural imbalances, under certain conditions, could cause a downfall. Despite demand inflation, structural imbalances are the second potential cause of downfall. Vulnerability indicators more specifically portray built-in structural imbalances and risk exposure of the economy against some stressors (see Figure 2). These are points of pressure for economic policies.

The output gap is on the top of the list of vulnerability indicators. First of all, Serbia faces the transitional output gap which may continue to be a source of substantial

Figure 2: Vulnerability indicators, 3Q 2018

Operational vulnerability indicators			Financial vulnerability indicators		
Indicators	Value	Reference Value	Indicators	Value	Reference Value
Transitional output gap	21%	0%	Indebtedness		
Okun index (inflation + unemployment)	13.4%	<12%	• Public debt/GDP	55.9%	<45%
Gini coefficient	37.8%	<30%	• External debt/GDP	63.2%	<45%
Current account as % GDP	-4.2%	<5%	• External debt/Export	128%	<220%
Consolidated budget as % GDP	1.5%	<3%	Credit rating		
Dependency ratio	0.51*	>1	• S&P	BB/stable	rank > BB+
Youth unemployment	25.3%**	<20%	• Fitch	BB/stable	rank > BB+
			• Moody's	Ba3/stable	rank > Ba+

Competitiveness vulnerability indicators		
Indicators	Value	Reference Value
Export (goods)/GDP	35.1%	>50%
Currency change (Oct2018/Oct2017)		
• Nominal appreciation	0.7%	<5%
• Real appreciation	0.7%	<0%
Global Competitiveness Index	65 of 140	65 - SEE average
Corruption Perception Index	77 of 180	59 - SEE average
Ease of Doing Business	48 of 190	60 - SEE average
Economic Freedom Index	69 of 180	62 - SEE average

\*Data for 2017

\*\*The share of young people who are not in employment, education or training (NEET) is 16.3%

systemic risks to the challenging financial sector stability and growth prospects. On balance, this gives greater weight to internal stress factors over external ones, typically faced by emerging and transition economies.

The current account should also be on the radar. During 1H 2018, the current account deficit amounted to EUR 1.17 billion (almost 3 percent of GDP), which is lower than in the same period last year. The trade deficit worsened by 28.3 percent (EUR 0.59 billion), while the surplus in services balance increased by 22.3 percent. Factor income deficit decreased by EUR 201.4 million (i.e., 13.8 percent y-o-y), mainly due to lower interest payments. In this period, exports have increased significantly, partly owed to global commodity prices hike in the segments of base metals, minerals and agricultural goods, which constitute an important share of the export basket. Unfortunately, in 3Q 2018 imports grew even faster widening the current account deficit. In this period, current account deficit amounted to -4.2 percent of GDP. The growth of imports was driven by both capital goods and higher consumer demand. This tendency continued until the end of the

year when the current account deficit amounted to -5.5 percent of GDP.

Capital balance is relatively stable but in a negative territory. Foreign exchange reserves fell down from the level of 6.2 months of imported goods and services in 2016, to 5.3 months in 2017, but returned to 6.0 months in 2018 indicating sufficient capacity and resilience of the capital balance despite some appreciation tendencies.

FDI amounted to EUR 1.42 billion, an increase of 0.3 percent compared to the same period in 2017. In recent years, on the global level, FDI fell by almost one quarter particularly in developed and transition economies [22, p. xii]. This trend should be a concern for policy makers and an input for giving greater role to internally generated investments.

The level of debt is also a cause of vulnerability, despite the fact that it shows a decreasing trend. Leaving aside the discussion of the adequacy of long-term debt/GDP ratio, there is no doubt that the fiscal balance helps reduce debt overhang. Besides evident budget surplus in the last two years, factors like favorable dollar/euro

exchange rate and lower cost of capital also helped reduce the share of public debt in GDP from 67.8 percent in 2016 to 57.9 percent in 2017, and to 55.9 percent in 3Q 2018. The current debt overhang is below threshold applicable for the EU economies (60 percent of GDP), but significantly above the comfortable zone of less than 40 percent of GDP, applicable for economies in this stage of economic development (US\$ 3.000-9.000 per capita). No doubt, debt overhang is a great concern policy makers need to watch out for.

To complete the picture about risk exposure toward the outstanding debt, we must say that in the following period cash outflow from the budget would be significantly higher due to repayment of EUR 1.5 billion eurobonds in 2020 and EUR 2.0 billion in 2021. Eurobond issue is primarily motivated by debt repayment, not by providing yield benchmark for FDI. Debt tranches due in the following two years will increase pressure of the new eurobond issue this year.

Soft data based on perception indexes are solid, not signaling stronger vulnerability. Serbia apparently leaves the best impression on the list of the World Bank's Ease of Doing Business, where it takes 48th place out of 190 countries. The perception of corruption prevalence is relatively good, but still far from the desired place. Economic freedom and broadly defined competitiveness of the country are visibly improving compared to the previous year. In 2018, Serbia's GCI puts it on the 65th place, roughly the average score of the SEE countries.

In professional circles, the sentiments about sustainability of reform achievements and growth prospects are not positive as they should be. Also, there are some misinterpretations of the facts. Combining hard and soft data about vulnerability, we do not see a strong indication that the economy would fall again from the cliff due to internal reasons. More precisely, a new recession due to structural imbalances is highly unlikely. Government positivity in reform promotion and business community response through investments could relax inherited uncertainty. Normally, previous standpoints require continuation on the current path of a hard macroeconomic policy regime and the search for the new growth model.

## Impact of the new normal

The 4IR, known as Industry 4.0, is a major underlying force of the new normal. It is an ambivalent phenomenon. It simultaneously gives rise to considerable hope, and feeds our deepest fears. In the modern era, along with water, land and air, connectivity became the ultimate free good. Ingeniousness of the new free good is zero marginal cost, after some set-up costs. The amalgam of technological breakthroughs in key fields (ICT from one side, and physical and/or biological sciences, from the other) considerably exceeded the transformative power of the 4IR. Advanced manufacturing, genomics, green energy, and circular economy are particularly important concepts in this regard. Combinatorial innovations are a key driver of growth.

It is a revolutionary change in organization and functioning of business organizations inspired by a reversal of conventional production processes logic in terms of connections of embedded production technologies and artificial intelligence. Simply put, this means that machinery no longer simply processes the product, but that the product (embedded human desire) communicates with the machinery to tell it exactly what to do.

4IR has emerged in business organizations by impacting business economics rules and micro management tools (primarily activity-based costing and value-based management). Actually, it is happening in the production stage and spreading up, both toward the upstream and downstream across the value chain (connected products, clients and supply chains), industries, and economy as a whole. A vast network of cyber-physical systems like synthesis of frontier technologies in combinatorial innovations, fully decentralized production with cognitive capabilities, augmented reality, etc. leads to structural changes in economy and society too.

In 4IR, creativity is a consequence of ever-broader range of requirements. Universal connectivity and a synthesis of breakthroughs from variety of technology fields stay behind almost endless combinatorial innovations. Combinatorial innovations are a point of view in 4IR that comes into play through daily practice of business organizations. Production and customer engagement were

early adopters, but it did not take long for other stages of the (exponential or extended) value chain to climb on board. Their application is growing in complexity at an ever-increasing pace.

As always, big tech means big impact, particularly vis-à-vis incumbents, the existing way of work and way of life. High tech companies have disruptive impact on incumbents. Namely, combinatorial innovations outperform sustaining technologies causing new entrants to take over business from incumbents. Also, new skillsets will make a lot of jobs redundant. As the nature of work evolves, different kinds of professions are needed, including data scientists, service designers and experts for cognitive technology who are great storytellers, turning communication from insight into impact. Powering the digital economy, from bitcoin mining to cloud computing and 5G network, digital infrastructure that powers our constant connectivity will consume more than 10 percent of current use of electricity and could rival the energy demand, particularly in small economies. This may have a lasting impact on the outlook for energy as well as all renewable natural resources.

Except the 4IR, the real world is full of other mega trends exacerbating disruptive character of combinatorial innovations [8]. They create the new normal. Trends like greater impact of geopolitics on economy inspired by changing balance between economic core and periphery, climate change, a global demographic explosion, population ageing in core economies, middle class expansion in peripheral economies, income inequality, etc., additionally exacerbate the impact of digital disruption. It is projected that by 2050, almost 41 percent of the world's population, or more than 4 billion people, might belong to upper or middle class, while 80 percent of the world's population will live in 600 mega cities [10]. Emergence of a large urban middle class is a powerful force for transformation of economy and society as a whole and the real threat to incumbents and environmental sustainability, as well.

Geopolitics or impact of politics on trade and investment is important not only due to the fight for ultimate resources by non-economic means, but particularly due to transformation of global free trade order into serial wars (currency, trade, and, most recently, technology). Geopolitics reemerged on multiple fronts, with major

political, economic, and social consequences. At the end of the day, the global economic order was transformed from a multilateral liberal trade framework into a deal-based system. The resulting policies aimed at diverting growth from others through geopolitical leverage, rather than through creation of value added from new sources of growth, are obviously not sustainable. Moreover, new shifting alliances of interest frequently outweigh geography and history, and generate additional instability. Last but not least, income inequality becomes global phenomenon.

Combinatorial innovations are not a panacea for structural problems of an economy. Combinatorial innovations trigger new challenges. Also, they deserve important political concerns due to a deepening skills gap and massive job displacement. The trade-off between labor and machines generates impact that is not always socially affordable.

In the new context, there is a growing gap between the character of emerging technologies and growth model and economic policy platform for their implementation. Namely, the intensity and scope of disruptive innovations are dismantling not only the traditional institutional choices based on market mechanisms, but also governance mechanisms and institutions. In defining national standards for emerging technologies, the process of trial and error in the market is being replaced with government initiatives and feedback loops from emerging industries. Also, new technologies must meet the circular economy and low carbon emission requirements.

If current models of growth and policy platform continue to exist, more growth leads to more wealth concentration, more carbon emission, more waste, as well as less clean water and air, and less free space. Government must develop policies and protocols for using technology and science in serving local public interests and obligation vis-à-vis global interest.

The 4IR needs new economic rules as well as new tools in micro and macro management. Non-evolutionary change is happening in the production stage of the value chain of industrial organizations and is influencing primarily changes in industrial structure. Consecutively, it is spreading out on other stages of the value chain, both downstream and upstream. Radical change in the way



of functioning of business organizations inspired by the new normal requires adjustments in their behavior (or strategy), business model of industry leaders, and rules of competition. Finally, it requires macroeconomic rules change.

## Double paradigm change

To complete the strategic outlook for the Serbia's economy, double paradigm change in business management as well as in economic theory also needs to be considered. The former is fundamentally important because economic policy measures inspired by a financially centric growth model in the last period have increased risk exposure to many stressors, particularly visible in an economy like Serbia's, which is not only out of tune, but also with sizable output gap and low competitiveness.

In choosing the vision of an ideal economic system, the neoliberal model of growth, as the last release of the free market economy model, treated the state property as "necessary evil", which could be terminated. Namely, the best thing the state can do is to give up any intention of steering the economy through its involvement. In such theory, the government intervenes in the economy only if market mechanism fails to internalize negative externalities. But, in reality, political lobbying permanently postpones or redirects counteractions.

With the intention to save the planet from a rapidly growing influx of negative externalities, the UN recently defined 17 global sustainability goals [19]. This set of goals represents a widely accepted set of multidimensional objectives against which the effectiveness of the growth model and an economic policy platform can be evaluated achieving long-run sustainable growth [4]. The message of this document is that today's prevailing economic model of growth must be replaced by the new one that gives priority to circular economy concept and puts ecological and social goals at the forefront.

Obviously, basic propositions of the neoliberal model do not respect microeconomics reality. For example, neoliberal macroeconomics ignores the possibility that the change in strategy and organization inspired by technology change and business model redefining can be far more

effective for company's performance than, for example, fiscal stimulus and interest rates cut.

Moreover, as we pointed out in previous papers, for example in [7], the premises of neoliberal economic model of growth no longer hold. Actually, the evolution of the environment impacted by the new normal shows that the neoliberal model set of premises is defined for an "empty world". We are not living in the world of ample space and resources, where private property is universally better (including high tech sector and combinatorial industries), and growth rate and GDP per capita are preferable proxies for wellbeing [5], [9].

The problem with such line of reasoning is that maximizing economic capital at the microeconomic level often derogates natural capital and cultural capital at the macroeconomic level. In the quest for the higher growth (meaning greater wealth), neoliberals forget that the limit of such world is the existence of the "full world", or world itself. Moreover, growth based on the neoliberal model is not continuous. Economic history teaches us that in each economy there are some episodes of strong growth followed by a much stronger fall, or overshooting. Cyclical forces that propelled growth were weakening faster than architects of the neoliberal economic system thought. Namely, exponential growth (compound average growth rate in the range 5-7% and more) provoked an overshooting effect, particularly if the economy had some structural imbalances. Moreover, due to cultural differences, in defining the model of growth, there is no universal approach. The exaggerated emphasis on economic systems came along to the detriment of natural systems and cultural system [21].

After digital disruption has deepened the negative effects of the Great Recession, the global economy has entered in secular stagnation. It was the crisis within a crisis. Now we are at a tipping point. If such a combined crisis is likely to be more prolonged than in the past, the economic system has to change, if only because the conventional economics paradigm is breaking down. To save the future, market fundamentalism is likely to be reversed soon. What is not sustainable will not sustain.

While core economies in the post-crisis period lose the time with unconventional policy measures, emerging

economies from the periphery of the global economy intensified the search for an alternative growth model and often experimented with alternatives [11], [13], [16] and [17]. Results of alternative concepts will rejuvenate the role of the heterodox approach and industrial policy doctrine in core economies too, with the emerging imperative to put growing emphasis on combinatorial innovations as the core driver of growth.

Figure 3 depicts a heterodox economic model of growth. Different combination of vertical and horizontal industrial policies should be used in different sectors and policy areas (“one size does not fit all”). In the new model of growth, environmental sustainability of some investment proposals is the filter preceding the market filter.

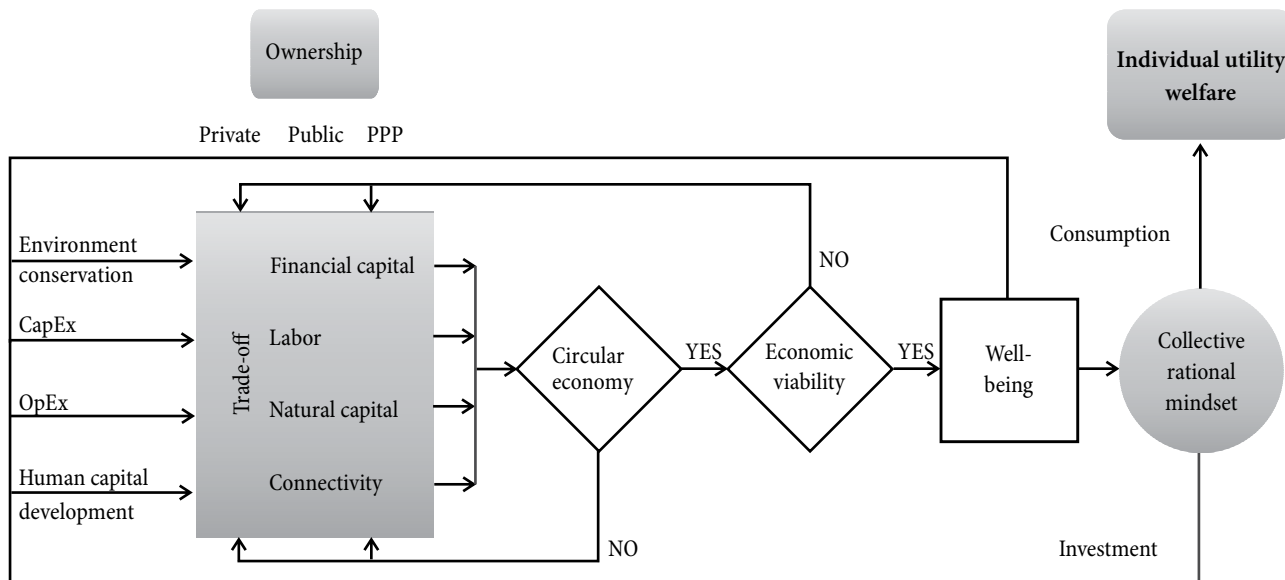
If progressive forces prevail, new economics paradigm could change the slope of the recovery trend. Paradigm change could accelerate the speed of technology development particularly in the areas of the intersection of cyber and physical (or biological) innovations as well as increase the size and scope of implementation of emerging combinatorial innovations. More importantly, new ways of using technological capabilities will offer opportunity for supporting the preservation and regeneration of nature rather than creation of hidden cost of economic development in the form of externalities [14, p. 2].

Incidentally, the neoliberal economic model of growth continues to act in many economies, often with excuse of

policy makers that there is no better model. Many policy makers have remained on the sidelines, skeptical about the possible alternative. But, an alternative still exists. Actually, there are four scenarios of possible futures. Two of them are based on the old model of growth, and two are based on the new one. Holding back the old model of growth, in case of Serbia, the first possibility assumes that the growth rate achieved in 2018 (+4.5 percent) can be sustained over the long term based on the existing set of policies and partial structural reforms coupled with sustained effort aimed at attracting FDI, infrastructure development, and promoting investments and exports. Alternatively, higher long-run growth rates (5-7 percent) could be achieved based on domestic investment, without much change in the policies or the speed of structural reforms. This scenario depends on fiscal stimuli, investment promotion, and clear political commitment to faster development.

In the case of a new growth model adoption, Serbia has two alternative futures. First, high but sustainable growth with faster GDP growth (5-7 percent growth rate annually) enabled by greater investment from large foreign investors attracted by faster and effective implementation of the necessary structural and institutional reforms aligned with the EU standards and regulations (total compatibility). Yet, this is not the optimal future scenario. A smart growth would be an ideal scenario depicted

Figure 3: The heterodox economic model of growth



by elimination of all structural imbalances and full implementation of institutional reforms. These reforms would be supplemented by smart industrial policy that would enable transformations necessitated by the ensuing global changes and disruptions triggered by the 4IR.

Albeit the most demanding and ambitious, the fourth scenario offers a framework to address present institutional and structural weaknesses and promote smart growth that would enable Serbia not only to survive, but to actively address the coming global challenges and prosper in the long term.

Quick transformation of an economy is extremely complex with rapidly rising number of mutually related elements. Previous analysis confirms that complexity and uncertainty are so strong that the conventional paradigm in economics could not provide the platform for managed change. When combinatorial innovations dominate environment, industry leaders need to get ahead of the competitive game and ensure they are not left behind. The 4IR happened, but the new theory in economics and business management has not emerged yet.

### Industrial policy centric approach

Five processes impacted Serbia's economic reality: attempting to overcome transitional recession, attempting to overcome the Great Recession, 4IR, new normal, and paradigm

change in business management and economics. With so many factors and relevant dimensions, it is critical that the new growth model for Serbia earns a full public trust needed to create a shared future in a sustainable economy, inclusive both toward people and nature. With climate change representing an existential challenge to the entire world, no responsible growth model and developmental strategy should ignore their impact on the environment.

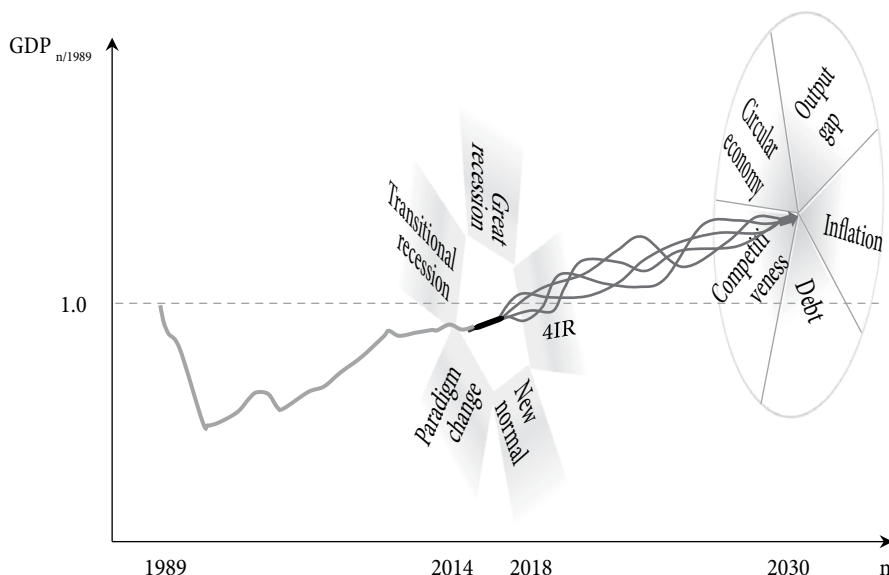
After success in fiscal consolidation, Serbia is on the path of recovery. But, very solid GDP growth rates in the last period are not a guarantee for a sustainable growth. The policy of inflation targeting is not a solution for output gap [1] and [2]. Industry-related growth and industrial policies make a difference. In the future, we need the economy to accomplish five goals:

- Output gap (low and stable)
- Inflation (low and stable)
- Sustainable debt
- Competitiveness based on combinatorial innovations
- Circular low-carbon economy

The mission of the new model of growth and related economic policy platform is achieving these goals. Figure 4 portrays the impact of key processes on major goals of future economic development.

The industrial policy-related growth model is based on horizontal and vertical industrial policies. Vertical policies are focused on the promotion of a particular sector

Figure 4: Key processes and goals of future economic development



of the economy. Horizontal policies aim at providing better conditions for all sectors in the economy. Also, the model requires harmonization with core macroeconomic policies (monetary and fiscal) using automatic stabilizers [7].

Industrial policies aspire to structurally change an economy's production structure and trajectory of growth. Consistent with the broader definition of industry, industrial policy represents a set of actions aimed at enabling and facilitating structural changes, and steering industrial development in desired directions. As J. Stiglitz [15] points out, there is no development without structural transformation. The growth without structural transformation will be neither sustainable nor inclusive.

UNCTAD's [20] global survey of industrial policies shows that, over the past five years alone, at least 84 countries, accounting for about 90 percent of global GDP, have adopted formal industrial development strategies. Countries at all levels of development are using targeted industrial policies, not only for economic development purposes, but also to respond to a myriad of contemporary challenges, such as creating new jobs, participating in the 4IR and in global value chains, promoting circular economy, etc. [15]. Unfortunately, Serbia is not yet on this map, but this does not necessarily mean lagging substantially behind all the countries that declared having industrial policy in action. As D. Rodrik [13] points out, it is not a matter of whether industrial policies should be implemented but how to do it.

There is a general consensus that very few countries have developed successfully without passing through a manufacturing-based, and often export-driven, industrialization phase in the past [13]. Today, industrial policies are largely driven by the need to offset the decline of manufacturing experienced during the period of rapid globalization in the 1990s and 2000s, as well as during the period of the Great Recession. Incentives, subsidies, public investment in the new technology frontier to rejuvenate internal production capacity are typical implemented measures. In case of developing countries, comparative advantage in manufacturing, arising out of cheap labor, will diminish. Consequently, a success in shifting toward horizontal policy measures promoting

modern infrastructure (both hard and soft) as well as to other sectors of the economy with potential for competitive advantage will be of paramount importance.

In this context, the main challenge will be to create sufficient internal capacity to design and implement appropriate industrial policy that would enable timely institutional and policy changes to keep the Serbian economy competitive. Breakthroughs in science and technology have introduced disruptive changes across practically all industries. However, one must bear in mind that developed and developing economies do not share the same prospects and opportunities given by 4IR. Though, because of robotization and artificial intelligence, developing countries' advantage in manufacturing, arising out of cheap labor, will diminish, and even if there is some success in expanding manufacturing, in most countries this expansion will not suffice to create enough jobs for those seeking employment in the modern economy [18]. The real challenge lies in providing good physical and 'institutional' infrastructure, which enhances the productivity of the economy.

New services will be the growth sector of the future. Healthcare tourism, education, software industry are possibly good choices for Serbia. But, there are certain peculiarities about service sector that developing countries like Serbia need to be aware of.

Production units are smaller, in general, and more resilient. For developing countries, this is a good thing: it is easier to manage SMEs. Unfortunately, with smaller production units, companies have less incentive for investment in R&D, and the benefits of learning by doing are less widely shared [18], especially in business ecosystems with increasing number of innovative start-ups. On the other side, many services can be more easily inserted into the global economy through the internet which makes it easier for developing economies to compete on the global scene (agglomeration effect).

To enable the economy to efficiently and effectively respond to past and forthcoming challenges, an adequate macroeconomic and industrial policy will have to be accompanied by a significantly improved public and private investment effort. Presently, the size is too small, the structure is not aligned with likely infrastructure

and human capital or knowledge gaps, the efficiency is too low, and the efficacy in achieving stated objectives is inadequate.

To conclude, the emerging economic and business ecosystems strive to embark on an innovation-driven global economy based on universal mobility. The intention is to promote the idea of exponential value chains, particularly in the context of ongoing scientific and technological transformations, by engaging business leaders from different industries, along with their peers from government and regulatory bodies in an effort to define sustainable and inclusive development trajectories. In these interactions under new rules of the game, scholars are expected to play the role of a catalyst, while politicians will act as integrators and visionaries defining the scope of relevant impact. Serbia looks as if it were still far away from this path. Serbia has not incorporated even the previous industrial revolution properly. However, the opportunity 4IR brings is skipping the missing stages of development and embarking on a dynamic trajectory of growth and development together with more developed countries. The opportunity Serbia must not miss.

Besides disruptive character of combinatorial innovations as a key legacy of 4IR, on top of challenges posed by the new normal, there is a possible hike of the cost of capital, particularly from the perspective of a eurobond due in the two following years. The design of a smart growth model that can address the problem of impotency faced by Serbia's economy and be capable of resolving major structural imbalances and institutional gaps is paramount.

If anything, it gave rise to improbable political and social desires of doubling the level of GDP per capita in as short as possible period of time. To reach the level of GDP per capita Croatia had when it joined the EU, Serbia's economy would need a 5 percent compound average growth rate over the next 15 years, or a 7 percent rate over the next 10 years. Also, to achieve income convergence with the most developed part of the EU (EU-15), Serbia would need to sustain 7 percent average annual growth rate for more than 20 years and it would need more than 40 years at real income growth rate of 5 percent. To achieve 5-7 percent growth, the sources of growth and the structure

of the economy would need to change dramatically, while continuously controlling the risks of potential reemergence of fiscal deficit and twin external deficits often associated with expansionary fiscal and pro-growth policies.

Is this possible? Maybe yes. Maybe no. Probably yes. If we stand behind the positive answer, we need new growth model and related economic policy platform based on a new set of propositions.

## Conclusion

After fiscal consolidation 2014-2017, Serbia's economy came back on the path of growth the new reality, in global economy, is like a cubistic picture with shifted, but highly interrelated elements. In quickly transforming world, business organisations are in interception of virtual and physical/biological worlds. Business ecosystem is becoming digitalized. Business model will be challenged by digital disruption and will be more technology driven. The explanatory elements related to the title of this paper refer to the following. First, industrial policy related growth model. Second, continuity in practicing hard macroeconomic policy regime. Third, inclusiveness toward nature and people based on heterodox economic policy platform. In heterodox approach, free market, infrastructure (both physical and digital\*, and technology development join together. The new role of the government is to define industrial policy that uses education, science and technology to nourish competitiveness and collective rationale.

Beside the big changes in microeconomics impacted by 4IR and other elements of the new normal, the very essence of macroeconomics remains almost unchanged. The growth is in the spotlight again. Today's growth should not be slow, because such growth causes rapid social collapse in a growing and more complex society. Also, growth should not be exponential due to environmental limits to growth and overshooting threat. In 4IR, growth has to be high enough, but intelligent. Intelligent growth has to be not only sustainable, but inclusive toward the people and nature both.

Achieving such a growth requires paradigm change in micro and macro management. In a truly digital

environment, competitors continually experiment with combinatorial innovations with the aim to revolutionize the economy and society as a whole. As digital disruption transforms the paradigm in microeconomics, the assurance of a new paradigm in macroeconomics has never been more essential.

In short, what the global economy really needs after a 40-year old experiment with neoliberalism is the circular economy new deal. The heterodox approach with industrial policies for tradable sectors in the center and automatic stabilizers for core macro policies is a reasonable alternative to neoliberal orthodoxy, maybe.

After fiscal consolidation, Serbia's economy achieved stability, but people did not. A mindset has to evolve from confusion, inspired by differences between hope and ambiguity, to clarity and give rise to prosperity. Such change, in itself, requires new mindsetting. Vulnerability is high even though the economy logged 4.5 percent growth in 2018. The central message of this paper is one of hope: there is hope for growth, both sustainable and inclusive. It takes time, it requires good allies and, most of all, it requires good politicians.

## References

- Blanchard, O. (2003). Comment on inflation targeting in transition economies: Experience and prospects, by Jiri Jonas and Frederic Mishkin. In NBER Conference on Inflation Targeting, Bal Harbour, Florida, January (pp. 23-25).
- Blanchard, O., Cerutti, E., & Summers, L. (2015). Inflation and activity—two explorations and their monetary policy implications (No. w21726). National Bureau of Economic Research.
- Christensen, C. (2013). *The innovator's dilemma: When new technologies cause great firms to fail*. Boston, MA: Harvard Business Review Press.
- Costanza, R., Daly, L., Fioramonti, L., Giovannini, E., Kubiszewski, I., Mortensen, L. F., ... & Wilkinson, R. (2016). Modeling and measuring sustainable wellbeing in connection with the UN Sustainable Development Goals. *Ecological Economics*, 130, 350-355.
- Daly, H. E. (2005). Economics in a full world. *Scientific American*, 293(3), 100-107.
- Đuričin, D. & Vuksanović, I. (2010). Population risk and sustainable development in combined economic crisis: The case of Serbia. International scientific conference, *Facing the future of South-East Europe*, Croatian Academy of science and arts and Croatian Institute of finance and accounting, 101-128.
- Đuričin, D., & Vuksanović, I. (2014). Quest for new development model and economic policy platform for Serbia: The role of industrial policy. *Ekonomika preduzeća*, 62(5-6), 229-250.
- Đuričin, D., & Vuksanović Herceg, I. (2018). Industry 4.0 and paradigm change in economics and business management. In N. Jun, Majstorovic, V. D., Djurdjanovic, D. (Eds), Proceedings of the 3rd International Conference on the Industry 4.0 Model for Advanced Manufacturing, 37-56. Berlin, Heidelberg: Springer.
- Farina, A., Johnson, A. R., Turner, S. J., & Belgrano, A. (2003). 'Full' world versus 'empty' world paradigm at the time of globalization. *Ecological Economics*, 45(1), 11-18.
- Kohli, H. S., & Agarwala, R. (Eds.). (2017). *The world in 2050: Striving for a more just, prosperous, and harmonious global community*. Oxford University Press.
- Lin, J. Y., & Monga, C. (2010). Growth identification and facilitation: The role of the state in the dynamics of structural change (Policy Research Working Paper No. 5313). The World Bank, Washington, DC.
- Porter, M. E., & Millar, V. E. (1985). How information gives you competitive advantage. *Harvard Business Review*, July-August.
- Rodrik, D. (2009). Industrial policy: Don't ask why, ask how. *Middle East Development Journal*, 1(1), 1-29.
- Schwab, K. (2017). *The fourth industrial revolution*. Crown Business.
- Stiglitz, J. E. (1998). Towards a new paradigm for development: Strategies, policies and processes. In H.-J. Chang (Eds.) (2001), *The Rebel Within*. London: Wimbledon Publishing Company.
- Stiglitz, J., & Lin, J. Y. (Eds.) (2013). *The industrial policy revolution I: The role of government beyond ideology*. Palgrave Macmillan, New York.
- Stiglitz, J. (2016). Stockholm statement: Toward a consensus on the principles of policymaking for the contemporary world. Retrieved from <https://www.sida.se/globalassets/sida/eng/press/stockholm-statement.pdf>.
- Stiglitz, J. E. (2018). From manufacturing-led export growth to a twenty-first-century inclusive growth strategy: Explaining the demise of a successful growth model and what to do about it. WIDER Working Paper 2018/176. Helsinki: United Nations University.
- The UN Sustainable Development Goals, (2015). UN, New York.
- UNCTAD. (2018). World investment report. Geneva: UN.
- Vujović, D. (2017). Serbia: Two years of fiscal consolidation: Results and medium-term sustainability issues. *Ekonomika preduzeća*, 65(1-2), 25-41.
- Wuethrich, B. (2000). Learning the world's languages--before they vanish. *Science*, 288(5469), 1156-1159.



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